

WHAT IS CLAIMED IS:

1. A tire testing machine, comprising a device for holding the tire and a means for measuring the characteristics of the tire held, wherein the measuring means comprises sensors positioned in a base upon which the machine rests on the ground.
2. The machine according to Claim 1, further comprising a reaction roller which presses against the tire, and a means for bringing the tire in contact with the roller, wherein the sensors are in the roller, and wherein the sensors measure the characteristics of the tire in contact with the roller.
3. The machine according to Claim 2, wherein the roller is convex.
4. The machine according to Claim 2, wherein the sensors are sensors of forces (Y, Z) experienced by the roller at constant position.
5. The machine according to Claim 1, wherein the tire holding device holds the tire vertically in the machine.
6. The machine according to Claim 1, wherein the sensors are piezoelectric sensors.
7. The machine according to Claim 1, further comprising means for driving the tire in rotation at about 150 revolutions per minute.
8. The machine according to Claim 7, wherein the means for driving the tire in rotation comprise two flanges positioned in contact with either side of the tire motors which drive each of the said flanges in rotation, and a device for tuning the motors to one another.

9. The machine according to Claim 1, wherein the sensors are selected from the group consisting of out-of-roundness sensors, lateral deformation sensors, and combinations thereof.

10. The machine according to Claim 1, wherein the measuring device comprises a device for measuring the rotational position of the tire in the machine.

11. A process for testing a tire, wherein the tire is placed in a machine comprising a device for holding the tire and a device for measuring the characteristics of the tire held, wherein the measuring device is located in a base upon which the machine rests on the ground.

12. The process according to Claim 11, wherein:
a reaction roller is pressed against the tire,
the tire is driven in rotation while in contact with the roller, and
sensors incorporated in the roller are used to measure the characteristics of the rotating tire.

13. The process according to Claim 12, wherein the tire is rotated at approximately 150 revolutions per minute.

14. The process according to Claim 12, wherein the sensors are located in a bearing of the roller.

15. The process according to Claim 11, wherein:
the tire is driven in rotation by two flanges pressed on either side of the tire
and by motors which drive in rotation each of the said flanges, and in that
the speeds and/or positions of the two motors are tuned to one another.

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16. The process according to Claim 11, wherein the tire is held vertically in the machine at the time of measurement.

17. The process according to Claim 11, wherein the measuring device is calibrated, at rest, by applying calibrated forces to the machine and measuring the corresponding signals emitted by the sensors.

18. The process according to Claim 17, wherein a hysteresis of the measuring device is determined.

19. The process according to Claim 11, wherein the tires are inflated to 4 bars.